

WHAT IS CLAIMED IS:

1. A method for providing a legal sequential combination of commands for verification testing of a computer system, comprising the steps of:

- 5 (a) providing a plurality of executable test commands;
- (b) providing at least one rule for forming legal sequences of commands;
- (c) forming a first bucket of commands comprising at least two of the commands in a first bucket sequentially ordered sequence legal under the at least one rule;
- 10 (d) forming a second bucket of commands comprising at least two of the commands arranged in a second bucket sequentially ordered sequence legal under the at least one rule; and
- (e) combining the first bucket and then the second bucket in a sequential bucket test combination having a test sequential order, the sequential bucket test
- 15 combination having a composite test command sequence legal under the at least one rule;
- wherein the second bucket and then the first bucket and may be combined into an alternate sequential bucket test combination having an alternate test sequential order, the alternate sequential bucket test combination having an alternate composite test command sequence legal under the at least one rule.

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2. The method of claim 1, wherein the executable test commands may be selected from the group comprising arguments of the computer system real operational

code, specific test instructions targeted for verification purposes, and randomly generated instructions.

3. The method of claim 1, wherein the executable test commands further
5 comprise a wait command configured to cause the computer system to pause for at least one instruction cycle, and wherein the step (c) of forming a first bucket of commands further comprises the following step:

(i) including said wait command in said first bucket.

10 4. The method of claim 1 wherein the step (e) combining the first and second buckets further comprises the following step:

(j) including said wait command between the first and second buckets, before the first bucket, or after the second bucket.

15 5. The method of claim 3 wherein the step (i) of including said wait command in said first bucket further comprises the step of:

(m) randomly selecting a point of insertion within the bucket sequentially ordered sequence.

20 6. The method of claim 4 wherein the step (j) of including said wait command between the first and second buckets, before the first bucket, or after the second bucket, further comprises the step of:

(n) randomly selecting a point of insertion of the wait command within the sequential bucket test combination.

7. The method of claim 5 wherein the step of (i) of including said wait
5 command in said first bucket further comprises the step of (o) inserting a random amount
of the wait command.

8. The method of claim 6 wherein the step (j) of including said wait
command between the first and second buckets, before the first bucket, or after the
10 second bucket, further comprises the step of (p) inserting a random amount of the wait
command.

9. The method of claim 1 wherein the step (a) of providing a plurality of
executable test commands further comprises the steps of:

15 (q) providing a parameter for at least one of the plurality of executable
commands; and

(r) assigning a value to the parameter.

10. The method of claim 9 wherein the step (r) of assigning a value to the
20 parameter is performed manually.

11. The method of claim 9 wherein the step (r) of assigning a value to the parameter is performed randomly.

12. A verification testing system for a computer system, comprising:

- 5 (a) a microprocessor;
- (b) a central manager connected to the microprocessor and configured to route command instructions to the microprocessor;
- (c) a plurality of executable test commands;
- (d) at least one rule for forming a legal sequences of commands;
- 10 (e) a first bucket of commands comprising at least two of the executable test commands in a first bucket sequentially ordered sequence legal under the at least one rule; and
- (f) a second bucket of commands comprising at least two of the commands arranged in a second bucket sequentially ordered sequence legal under the at least one rule;
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wherein the central manager is configured to combine the first bucket and then the second bucket in a sequential bucket test combination having a test sequential order, the sequential bucket test combination having a composite test command sequence legal under the at least one rule, and run the sequential bucket test combination on the microprocessor; and

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wherein the central manager is further configured to combine the second bucket and then the first bucket into an alternate sequential bucket test combination having an

alternate test sequential order, the alternate sequential bucket test combination having an alternate composite test command sequence legal under the at least one rule, and run the alternate sequential bucket test combination on the microprocessor.

5 13. The system of claim 12, wherein the executable test commands may be selected from the group comprising arguments of the computer system real operational code, specific test instructions targeted for verification purposes, and randomly generated instructions.

10 14. The system of claim 12, wherein the executable test commands further comprise a wait command configured to cause the computer system to pause for at least one instruction cycle, and wherein the first bucket of commands further comprises said wait command.

15 15. The system of claim 12, wherein the executable test commands further comprise a wait command configured to cause the computer system to pause for at least one instruction cycle, wherein sequential bucket test combination further comprises said wait command between the first and second buckets, before the first bucket, or after the second bucket.

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16. The system of claim 12, wherein the executable test commands further comprise a parameter for at least one of the plurality of executable commands, and wherein the central manager is configured to assign a value to the parameter.

5 17. The system of claim 16 wherein the central manager is configured to manually assign a value to the parameter.

18. The system of claim 16 wherein the central manager is configured to randomly assign a value to the parameter.

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19. An article of manufacture comprising a computer usable medium having a computer readable program embodied in said medium, wherein the computer readable program, when executed on a computer, causes the computer to:

- (a) provide a plurality of executable test commands;
- 15 (b) provide at least one rule for forming legal sequences of commands;
- (c) form a first bucket of commands comprising at least two of the commands in a first bucket sequentially ordered sequence legal under the at least one rule;
- (d) form a second bucket of commands comprising at least two of the commands arranged in a second bucket sequentially ordered sequence legal under the at
- 20 least one rule; and

(e) combine the first bucket and then the second bucket in a sequential bucket test combination having a test sequential order, the sequential bucket test combination having a composite test command sequence legal under the at least one rule;

5 wherein the second bucket and then the first bucket may be combined into an alternate sequential bucket test combination having an alternate test sequential order, the alternate sequential bucket test combination having an alternate composite test command sequence legal under the at least one rule.